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The Modern Construction Solutions

#1059, MIG-A Sector, Opp. Railwheel Factory,
Yelahanka New Town, Bangalore - 64
Ph : 8048505503 | Email : aartnassociates@gmail.com

Test Report

DETERMINATION OF BITUMEN CONTENT AND GRADATION DENSE BITUMOUS MACADAM MIX

Name of Work	:	Comprehensive Development works in ward No. 03 Attur
Client	:	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengaluru.
Consultant	:	Arun kumar Das (AARTN ASSOCIATES)
Contractor	:	B.B Umesh (S.M.L.P Asphalts)
Customer Reference	:	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Date of Testing	:	10/08/2021
Type of Mix	:	DBM
Sample I/D	:	DBM-1

GRADATION FOR DBM

(As per MORTH& 500-10, Grading-2)

Sample Location :	At plant	Date Of Sampling:	10/08/2021
		Date of testing:	10/08/2021
Type of material & Purpose:	DBM	Over Dry Wt. (gms):	1500

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % retained	Cummulative % passing	Specification limits
37.50	0	0	0	100.00	100.00
26.50	80	80	5.33	94.67	90-100
19.00	110	190	12.67	87.33	71-95
13.20	230	420	28.00	72.00	56-80
4.750	340	760	50.67	49.33	38-54
2.360	185	945	63.00	37.00	28-42
0.300	280	1225	81.67	18.33	7-21
0.075	180	1405	93.67	6.33	2-8
Pan	95				
Total	1500				

Consultant

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Project	Name of Work : Comprehensive Development works in ward No. 03 Attur
Client	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengaluru.
Consultant	AARTN ASSOCIATES Yelahanka Bangalora
Contractor	B.B Umesh (S.M.L.P Asphalts)

FLAKINESS AND ELONGATION INDICES(IS 2386, PART 1)

Proposed Use		DBM		Proposed Use	DBM
Sample Location		At Plant		Date of Sampling	10/08/2021
				Date of Testing	10/08/2021
Size of Aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve,mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves(A) gms.	Wt.of aggregate passing from Flakiness gauge(B) gms	Wt.of aggregate retained on Flakiness gauge(C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D) gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	7850	680	7170	380.00
31.5	25.0	4256	205	3569	290.00
25.0	20.0	2450	270	1978	210.00
20.0	16.0	1568	340	1000	270.00
16.0	12.5	560	98	462	156.00
12.5	10.0	280	60	230	89.00
10.0	6.3	130	80	80	56
Total		**17094**	**1733**	**14489**	**1451**

Results		
	Flakiness Index(%)	10.14
	Elongation Index(%)	10.01
	Combined FI+EL(%)	20.15

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Project	Name of Work : Comprehensive Development works in ward No. 98 Attur
Client	Brihat Bangalore Mahanagara Palike (BBMP), Yelahanka Zone, Bangalore.
Consultant	AARTN ASSOCIATES Yelahanka Bangalore
Contractor	B.B Urmish (S.M.L.P Asphalts)

AGGREGATE IMPACT VALUE (IS: 2386 Part-4)

Proposed Use	DBM	Date of Sampling	30/08/2020
Sample Location & Point		Date of Testing	31/08/2020

Sl.No.	Description		Test No.			Spec Limits%
			1	2	3	
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(W1)	352.00	372.00	378.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(W2)	296.00	288.00	275.00	
3	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(W1)	56.00	84.00	103.00	
4	Aggregate Impact Value (%)	(W2/W1)*100	24.43	24.73	27.25	
5	Average Aggregate impact value	(%)		25.45		Max - 30%

Remarks : Satisfactory / Not Satisfactory

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Name of Work	:	Comprehensive Development works in ward No. 03 Attur
Client	:	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengaluru.
Consultant	:	Arun kumar Das (AARTN ASSOCIATES)
Contractor	:	B.B Umesh (S.M.L.P Asphalts)
Customer Reference	:	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Type of Mix	:	BC
Sample I/D	:	BC-1

GRADATION FOR BC

As per MORT&H 500-18, Grading-2)

Sample Location :		At plant	Date Of Sampling:	BC	
			Date Of testing	03/08/2021	
Tyepe of materail & Purpose:		BC	Oven Dry Wt(gms):	03/08/2021	
IS Sieve size in mm	**Weight rertained**	**Cummulative weight retained (gm)**	**cummulative % of retained**	**Cummulative % of passing**	**Specification limits**
19.00	0	0	0.00	100.00	100.00
13.20	125	125.0	10.42	89.58	79-100
9.50	80	205.0	17.08	82.92	71-95
4.75	220	425.0	35.42	64.58	53-71
2.360	150	575.0	4.92	52.08	42-58
1.180	135	710.0	59.17	40.83	34-48
0.600	120	830.0	69.17	30.83	26-38
0.300	90	920.0	76.67	23.33	18-28
0.150	75	995.0	82.92	17.08	12-20
0.075	115	1110.0	92.50	7.50	04-10
Pan	90				
Total	1200				

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Name of Work	:	Comprehensive Development works in ward No. 03 Attur
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Consultant	:	Arun kumar Das (AARTN ASSOCIATES)
Contractor	:	B.B Umesh (S.M.L.P Asphalts)
Customer Reference	:	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Type of Mix	:	BC
Sample I/D	:	BC-1

GRADATION FOR BC

As per MORT&H 500-18, Grading-2)

Sample Location :	At plant	Date Of Sampling:	BC
		Date Of testing	03/08/2021
Tyepe of materail & Purpose:	BC	Oven Dry Wt(gms):	03/08/2021

IS Sieve size in mm	Weight rertained	Cummulative weight retained (gm)	cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	125	125.0	10.42	89.58	79-100
9.50	80	205.0	17.08	82.92	71-95
4.75	220	425.0	35.42	64.58	53-71
2.360	150	575.0	4.92	52.08	42-58
1.180	135	710.0	59.17	40.83	34-48
0.600	120	830.0	69.17	30.83	26-38
0.300	90	920.0	76.67	23.33	18-28
0.150	75	995.0	82.92	17.08	12-20
0.075	115	1110.0	92.50	7.50	04-10
Pan	90				
Total	1200				

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Test Report

BITUMEN CONTENT AND GRADATION DETERMINATION OF DENSE BITUMINOUS MACADAM MIX

Name of Work	:	Comprehensive Development works in ward No. 03 Attur
Client	:	Brihat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bangaluru
Consultant	:	Arun kumar Das (AARTN ASSOCIATES)
Contractor	:	B.B Umesh (S.M.L.P Asphats)
Customer Reference	:	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Date of Testing	:	03/08/2021
Type of Mix	:	BC
Sample I/D	:	BC1

DETERMINATION OF BITUMEN CONTENT

Descripiton	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	910	932
2. Weight of Mixture after extraction, g	859	873
3. Weight of Bitumen	51	59
4. Weight of filter paper before extraction, g	2.00	2.15
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	2.10	1.85
7. Weight of Bitumen & fines	53.1	53.89
8. Bitumen content in %	5.84	5.82
9. Average Bitumen content in %	5.83	
10. Minimum Bitumen content in %	5.80	

GRADATION FOR BC AFTER EXTRACTION

(As per MORTH& 500-10, Grading-2)

Sample Location :	At Site	Date Of Sampling:	03/08/2021	
		Date of testing:	03/08/2021	
Type of material & Purpose:	DBM	Over Dry Wt. (gms):	859.0	

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % retained	Cummulative % passing	Specification limits
19.00	0	0	0	100.00	100
13.20	85	85.0	9.90	90.10	79-100
9.50	130	215.0	25.03	74.97	71-95
4.75	90	305.0	35.51	64.49	53-71
2.36	135.0	440.0	51.22	48.78	42-58
1.18	98.0	538.0	62.63	3737	34-48
0.60	65.0	603.0	70.20	29.80	26-38
0.30	40.0	643.0	74.85	25.15	18-28
0.15	82.0	725.0	84.40	15.6	12-20
0.075	82.0	807.0	93.95	6.05	4-10
Pan	52.0				
Total	859.0				

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Test Report

DETERMINATION OF BITUMEN CONTENT AND GRADATION DENSE BITUMOUS MACADAM MIX

Name of Work	:	Comprehensive Development works in ward No. 03 Attur
Client	:	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengaluru.
Consultant	:	Arun kumar Das (AARTN ASSOCIATES)
Contractor	:	B.B Umesh (S.M.L.P Asphats)
Customer Reference	:	EE(PROJECT)/YNK ZONE/WO/173/2019-20

flakiness and blongation indices (is2386, PART 1)

Tyep of Material	BC	Proposed Use	BC
Sample Location :	At plant	Date Of Sampling:	04/08/2021
		Date Of Testing:	04/08/2021

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggreate passing from Flankiness gauge (B) gms	wt. of aggregate retianed on Flankiness gaue (c)gms	Wt. of aggregate retained on Elongation gauge after retined on Flakiness gauge (D) gms
63	50	0	0	0	0
50	40	0	0	0	0
40	31.5	0	0	0	0
32	25	0	0	0	0
25	20	0	0	0	0
20	16	948	115	833	75
16.000	12.5	1135	81.00	1054	120
12.500	10	680	75	605	55
10	6.3	580	66	514	51
Total		3343	337	3006	301

Note: Minimum 200 PCs should be takne on each fraction of test

		Flakiness Index (%)	10.08		
		Elongation Index (%)	10.01		
		Combined FI+EL (%)_	20.09		

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Test Report

BITUMEN CONTENT AND GRADATION DETERMINATION OF DENSE BITUMINOUS MACADAM MIX

Name of Work	:	Comprehensive Development works in ward No. 03 Attur
Client	:	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengaluru.
Consultant	:	Arun kumar Das (AARTN ASSOCIATES)
Contractor	:	B.B Umesh (S.M.L.P Asphats)
Customer Reference	:	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Date of Testing	:	04/08/2021
Type of Mix	:	BC
Sample I/D	:	BC1

DETERMINATION OF BITUMEN CONTENT

Descripiton	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	930	910
2. Weight of Mixture after extraction, g	878	859
3. Weight of Bitumen	52	51
4. Weight of filter paper before extraction, g	2.00	2.15
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	2.10	1.85
7. Weight of Bitumen & fines	54.1	52.85
8. Bitumen content in %	5.82	5.81
9. Average Bitumen content in %	5.81	
10. Minimum Bitumen content in %	5.80	

GRADATION FOR BC AFTER EXTRACTION

(As per MORTH& 500-10, Grading-2)

Sample Location :	At Site	Date Of Sampling:	04/08/2021
		Date of testing:	04/08/2021
Type of material & Purpose:	DBM	Over Dry Wt. (gms):	878.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % retained	Cummulative % passing	Specification limits
19.00	0	0	0	100.00	100
13.20	85	85.0	9.68	90.32	79-100
9.50	120	205.0	23.35	76.65	71-95
4.75	86	291.0	33.14	66.86	53-71
2.36	140.0	431.0	49.09	50.91	42-58
1.18	120.0	551.0	62.76	37.24	34-48
0.60	75.0	626.0	71.30	28.70	26-38
0.30	66.0	692.0	78.82	21.18	18-28
0.15	42.0	734.0	83.60	16.4	12-20
0.075	69.0	803.0	91.46	8.54	4-10
Pan	75.0				
Total	878.0				

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Name of Work	:	Comprehensive Development works in ward No: 03 Attur
Client	:	Bruhat Bengalore Maharagara Palike (BBMP) , Yelahanka Zone, Bengaluru.
Consultant	:	Arun kumar Das (AARTN ASSOCIATES)
Contractor	:	B B Umesh (S.M.L.P Asphalts)
Customer Reference	:	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Type of Mix	:	BC
Sample I/D	:	BC-1

GRADATION FOR BC

As per MORT&H 500-18, Grading-2)

Sample Location :		At plant	Date Of Sampling:	BC	
			Date Of testing	10/08/2021	
Tyepe of materail & Purpose:		BC	Oven Dry Wt(gms):	10/08/2021	
IS Sieve size in mm	**Weight rertained**	**Cummulative weight retained (gm)**	**cummulative % of retained**	**Cummulative % of passing**	**Specification limits**
19.00	0	0	0.00	100.00	100.00
13.20	125	125.0	10.42	89.58	79-100
9.50	80	205.0	17.08	82.92	71-95
4.75	220	425.0	35.42	64.58	53-71
2.360	150	575.0	4.92	52.08	42-58
1.180	135	710.0	59.17	40.83	34-48
0.600	120	830.0	69.17	30.83	26-38
0.300	90	920.0	76.67	23.33	18-28
0.150	75	995.0	82.92	17.08	12-20
0.075	115	1110.0	92.50	7.50	04-10
Pan	90				
Total	1200				

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Name of Work	:	Comprehensive Development works in ward No. 03 Attur
Client	:	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengaluru.
Consultant	:	Arun kumar Das (AARTN ASSOCIATES)
Contractor	:	B.B Umesh (S.M.L.P Asphalts)
Customer Reference	:	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Type of Mix	:	BC
Sample I/D	:	BC-1

GRADATION FOR BC

As per MORT&H 500-18, Grading-2)

Sample Location :	At plant	Date Of Sampling:	BC
		Date Of testing	10/08/2021
Tyepe of materail & Purpose:	BC	Oven Dry Wt(gms):	10/08/2021

IS Sieve size in mm	Weight rertained	Cummulative weight retained (gm)	cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	125	125.0	10.42	89.58	79-100
9.50	80	205.0	17.08	82.92	71-95
4.75	220	425.0	35.42	64.58	53-71
2.360	150	575.0	4.92	52.08	42-58
1.180	135	710.0	59.17	40.83	34-48
0.600	120	830.0	69.17	30.83	26-38
0.300	90	920.0	76.67	23.33	18-28
0.150	75	995.0	82.92	17.08	12-20
0.075	115	1110.0	92.50	7.50	04-10
Pan	90				
Total	1200				

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Client	:	Bruhat Bengalore Mahanagara Palike (BBMP) , Yelahanka Zone, Bengaluru.
Consultant	:	Arun kumar Das (AARTN ASSOCIATES)
Contractor	:	B.B Umesh (S.M.L.P Asphats)
Customer Reference	:	EE(PROJECT)/YNK ZONE/WO/173/2019-20
Date of Testing	:	10/08/2021
Type of Mix	:	BC
Sample I/D	:	BC1

DETERMINATION OF BITUMEN CONTENT

Descripiton	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	910	952
2. Weight of Mixture after extraction, g	859	873
3. Weight of Bitumen	51	52
4. Weight of filter paper before extraction, g	2.00	2.15
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	2.10	1.85
7. Weight of Bitumen & fines	53.1	53.85
8. Bitumen content in %	5.84	5.82
9. Average Bitumen content in %	**5.83**	
10. Minimum Bitumen content in %	**5.80**	

GRADATION FOR BC AFTER EXTRACTION

(As per MORTH& 500-10, Grading-2)

Sample Location :	At Site	Date Of Sampling:	10/08/2021
		Date of testing:	10/08/2021
Type of material & Purpose:	DBM	Over Dry Wt. (gms):	859.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % retained	Cummulative % passing	Specification limits
19.00	0	0	0	100.00	100
13.20	85	85.0	9.90	90.10	79-100
9.50	130	215.0	25.03	74.97	71-95
4.75	90	305.0	35.51	64.49	53-71
2.36	135.0	440.0	51.22	48.78	42-58
1.18	98.0	538.0	62.63	3737	34-48
0.60	65.0	603.0	70.20	29.80	26-38
0.30	40.0	643.0	74.85	25.15	18-28
0.15	82.0	725.0	84.40	15.6	12-20
0.075	82.0	807.0	93.95	6.05	4-10
Pan	52.0				
Total	859.0				

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